

***Remarks***

Reconsideration of this Application is respectfully requested.

Upon entry of the foregoing amendment, claims 13-21, 24-29, 31, and 33 are pending in the application. Claims 13 and 28 are the independent claims. Claims 24-27, 29, 31, and 33 have been withdrawn from consideration as being directed to a non-elected Group. Claims 13 and 28 are sought to be amended. Applicants reserve the right to prosecute similar or broader claims, with respect to any amended claims, in the future. These changes are believed to introduce no new matter, and their entry is respectfully requested.

Based on the above amendment and the following remarks, Applicants respectfully request that the Examiner reconsider all outstanding rejections and that they be withdrawn.

***Response to Arguments Section of Office Action***

Pages 10-11 of the Office Action, Sections 15-21, appear incomplete to the Applicants as it appears some text is missing and other portions do not appear to have complete thoughts. Applicants respectfully request the Examiner provide the full text so Applicants have a full chance to consider and respond to the Examiner's arguments.

***Rejection under 35 U.S.C. §112***

**35 U.S.C. §112, second paragraph**

Claims 13-21 and 28

Sections 10-11 of the Office Action appear to reject claims 13-21 and 28 under 35 U.S.C. §112, second paragraph, as allegedly being indefinite. Without acquiescing to the propriety of the rejection, Applicants have amended claims 13 and 28. Accordingly, Applicants respectfully request that the rejection under 35 U.S.C. §112, second paragraph, be reconsidered and withdrawn.

***Rejection under 35 U.S.C. § 103***

Section 14 of the Office Action rejects claims 13-21 and 28 under 35 U.S.C. § 103(a) as allegedly being unpatentable over Ross, Jr. et al. (US 5823948) (hereinafter Ross) in view of Pories et al. (US 2002/0082868 A1) (hereinafter Pories), and in further view of "A Hierarchical Data Management Facility for Clinical Record Applications" (hereinafter NPL). Applicants respectfully traverse the rejection.

Without conceding the propriety of the rejection, claims 13 and 28 have been amended to clarify the distinguishing features.

**I. Ross, Pories, and NPL Do Not Disclose Normalizing the Standard Patient-Language Symptoms**

Ross, Pories, and NPL do not teach or suggest distinguishing features of the claims. For example, claims 13 and 28 were clarified to recite, in part, "wherein the standard patient-language symptoms are normalized, the normalizing comprising, separating the standard patient-language symptoms according to each meaning, aligning the standard patient-language symptoms on a term spelling basis, restoring misspellings

and abbreviations of standard patient-language symptoms to full spellings, and excluding ambiguous standard patient-language symptoms.” The clarifying amendment is supported throughout the originally filed application, e.g., at page 13, line 37 through page 14, line 16 of the English language version of the published PCT application, WO 2005/006235 (“the specification”), and does not constitute new matter.

As claimed in claims 13 and 28, normalization of the standard patient-language symptoms comprises several stages that organize and refine the set of standard patient-language symptoms. As claimed, the normalization facilitates the subsequent mapping process by processing the standard patient-language symptoms in ways that make it easier to provide appropriate matches between standard patient-language symptoms and the standard codes.

The claimed normalization removes discrepancies from the standard patient-language symptoms that would frustrate meaningful mapping. As claimed, the normalization involves several constituent stages. These claimed stages are not taught or suggested by Ross, Pories, or NPL.

**A. The claimed “separating the standard patient-language symptoms according to each meaning” is not taught in the applied references**

The first claimed stage is “separating the standard patient-language symptoms according to each meaning.” The Examiner alleged that similar claimed subject matter was taught in the applied references when discussing claim 20, which recites, “the selected extracted patient-language terms are separated into main concepts, concept qualifiers, and concept modifiers.”

The Office Action, page 8, discusses, with respect to dependent claim 20, the feature of “the selected extracted patient-language terms are separated into main concepts, concept qualifiers, and concept modifiers” and states that this this feature is taught by Pories at FIG. 1A-B, items 14-25e and related text. The Examiner does not indicate that Ross or NPL teaches this feature, and instead suggests that one of ordinary skill in the art would have been able to incorporate the teachings of Pories into Ross as provided by Pories ¶[0012]-[0017].

There is no disclosure of this feature in Ross or NPL. Furthermore, Applicants disagree with the Examiner’s characterization of Pories. In ¶ [0013] of Pories, Pories discloses “DRCL entries can be qualified by severity with numerical scales and location by anatomic diagrams. Furthermore, Pories discloses how the lexicon of Pories is constructed in paragraphs ¶ ¶ [0074]-[0078]. However, even though Pories discusses qualifying DRCL entries and constructing a lexicon, Applicants submit that Pories does not disclose at least the above noted distinguishing features of the claims.

Therefore, as Pories does not cure the deficiencies of Ross, and NPL is not used to and does not disclose at least this distinguishing feature, the applied references cannot be used to establish a prima facie case of obviousness for the claims.

**B. The claimed “aligning the standard patient-language symptoms on a term spelling basis” is not taught in the applied references**

The second claimed stage is “aligning the standard patient-language symptoms on a term spelling basis.” This claimed stage groups patient-language symptoms with the same spelling. This claimed feature facilitates use of the later feature in which embodiments discriminate between various senses of terms with the same spelling, as

discussed below. The Examiner alleged this claimed subject matter was taught in the art when discussing claim 21, which recites, “the main concepts are aligned on a spelling and concept basis.”

The Office Action, page 9, with respect to claim 21, discloses the feature of “the main concepts are aligned on a spelling and concept basis” and states that this this feature is taught by Ross at FIG. 3, items 105-114 and related text. The Examiner does not indicate that Pories or NPL teaches this feature, nor do they teach or suggest at least this additional distinguishing feature.

However, a review of the cited portion of Ross, as well as Ross as a whole, does not reveal any disclosure in which Ross takes into account spelling when organizing concepts. For example, Ross describes its Language Generation Module as follows:

A key function within the TeleMed program is the language generator. TeleMed stores most medical information as individual specific medical facts rather than as text. When displaying these facts in an on-screen medical summary or on printed medical records, these facts are quickly converted to complex sentence structure similar to physician’s dictated medical text.

(Ross, col. 7, lines 52-59.)

This disclosure and others show that Ross stores and organizes facts on a conceptual and grammatical basis rather than by the claimed spelling. The claimed spelling facilitates mapping in that it allows features such as the feature of providing for the most suitable concept for terms with similar spellings, as discussed below.

Therefore, as Pories and NPL do not cure the deficiencies of Ross, the applied references cannot be used to establish a prima facie case of obviousness for the claims.

**C. The claimed “restoring misspellings and abbreviations of standard patient-language symptoms to full spellings” is not taught in the applied references**

The third claimed stage is “restoring misspellings and abbreviations of standard patient-language symptoms to full spellings.” This claimed stage provides that the set of original standard patient-language symptoms may include symptoms that would map to standard codes if misspellings and abbreviated terms are restored to full spellings. Thus, this claimed stage allows misspelled and abbreviated terms that should map to fully spelled out terms to do so by preprocessing them into a form that is easier to map.

As discussed above, as Ross, Pories, and NPL do not disclose processing the symptoms based on spelling, and none of the applied references disclose the feature of restoring misspelled and abbreviated words, the applied references cannot be used to establish a prima facie case of obviousness.

**D. The claimed “excluding ambiguous standard patient-language symptoms” is not taught in the applied references**

The fourth claimed stage is “excluding ambiguous standard patient-language symptoms.” This claimed stage excludes symptoms for which no clear mapping is possible. This claimed stage ensures that only patient language symptoms that may be successfully mapped are part of the mapping process.

Both Ross and Pories disclose embodiments in which the input by the user is restricted so that only valid (i.e., not ambiguous) input is accepted. For example, Ross

discloses information entry through prephrased text, in which “these computer system data entry screens allow medical personnel to select prestored personalized text phrases to be included in specific medical record components” (Ross, col. 3, lines 9-12.) Ross further discloses “Complaints Module – TeleMed is a complaint driven system. This module manages complaints, differential diagnosis, and diagnosis. As complaints are entered, the system begins to automatically modify later functions so department personnel deal with a dramatically reduced array of selections.” (Ross, col. 8, lines 55-60.)

Similarly, Pories teaches that “the pre-selection and identification of words and phrases can assure that each word and phrase is clearly defined and has only one meaning” (Pories at [0017]).

Also, NPL teaches “any particular topic may be described to an arbitrary depth of detail by means of a succession of increasingly discriminating selections from the options presented.” (NPL, col. 1, lines 16-19.)

Thus, these features of Ross, Pories, and NPL differ from at least the above noted distinguishing features in that Pories avoids ambiguity by only allowing a user to input unambiguous input rather than the claimed removing ambiguous input from a set of input that may include ambiguous input.

Therefore, as Pories and NPL do not cure the deficiencies of Ross, the applied references cannot be used to establish a prima facie case of obviousness for the claims.

Therefore, for any or all of at least these four reasons, the applied references cannot be used to establish a prima facie case of obviousness with respect to at least the claimed normalization, nor its claimed constituent stages.

## II. Ross, Pories, and NPL Do Not Disclose Various Features of the Mapping

Claims 13 and 28 recite further distinguishing features where they further recite, in part, “when a same spelling belongs to a variety of concepts, a most suitable concept for the character of the standard patient-language symptom among the concepts is retrieved and mapped, when two concepts are have the same parent in a parent-child relationship and a difference between the two concepts is ambiguous clinically, one concept is selected and mapped consistently, when the meaning of the standard patient-language symptom is subdivided into multiple concepts, a top concept capable of representing the comprehensive meaning of the standard patient-language symptom is mapped, when standard patient-language symptoms of the same concept and the same spelling have a duplicate concept status, a concept with a current status is mapped, and when a standard patient-language symptom is to be mapped to an overlapping or unclear concept, the mapping is performed only if no alternative concept for mapping is available.” The clarifying amendment is supported throughout the originally filed application, e.g., at page 14, line 25 through page 15, line 13 of the English language version of the published PCT application, WO 2005/006235 (“the specification”), and does not constitute new matter.



A. The applied references do not teach or suggest “when a same spelling belongs to a variety of concepts, a most suitable concept for the character of the standard patient-language symptom among the concepts is retrieved and mapped”

The first claimed condition is, “when a same spelling belongs to a variety of concepts, a most suitable concept for the character of the standard patient-language symptom among the concepts is retrieved and mapped.” For example, this feature allows embodiments to distinguish between multiple senses of words such as “mass”, which may apply to meanings such as a morphologic abnormality or a quantity of matter.

This distinguishing claimed feature allows embodiments to map concepts that would otherwise not be mappable because there would be no ability to discriminate between meanings. Neither Ross, Pories, nor NPL discloses processing based on spelling. Moreover, none of the cited art discloses the feature of intelligently mapping to the most suitable concept when a same spelling belongs to a variety of concepts.

B. The applied references do not teach or suggest “when two concepts are have the same parent in a parent-child relationship and a difference between the two concepts is ambiguous clinically, one concept is selected and mapped consistently”

The second claimed condition is, “when two concepts are have the same parent in a parent-child relationship and a difference between the two concepts is ambiguous clinically, one concept is selected and mapped consistently.” An example of the use of this condition is if there is a choice between “anorexia, loss of appetite (finding)” and “appetite loss-anorexia (finding)” and both are children of quantity of appetite, since these two concepts is ambiguous, the embodiments may arbitrarily always choose one of these such as “appetite loss-anorexia (finding)”.

This distinguishing claim feature deals with ambiguity in the mapping process in a way that improves consistency. Neither Ross, Pories, nor NPL discloses consistently mapping to an arbitrary one of two ambiguously related children concepts of the same parent concept.

**C. The applied references do not teach or suggest “when the meaning of the standard patient-language symptom is subdivided into multiple concepts, a top concept capable of representing the comprehensive meaning of the standard patient-language symptom is mapped”**

The third claimed condition is, “when the meaning of the standard patient-language symptom is subdivided into multiple concepts, a top concept capable of representing the comprehensive meaning of the standard patient-language symptom is mapped.” An example of this is that if the mapping may be to either “abnormal weight loss (finding)” or “excessive weight loss (finding)”, both of these concepts are children of “weight loss (finding)”, and it is not clear whether “abnormal weight loss (finding)” or “excessive weight loss (finding)” is more appropriate, then the mapping will be made to “weight loss (finding).”

This distinguishing claim feature deals with ambiguity in the mapping process in a way that improves consistency. Neither Ross, Pories, nor NPL discloses resolving an ambiguity between two children of a parent by choosing the parent concept in lieu of one of the ambiguously related children concepts of the same parent concept.

**D. The applied references do not teach or suggest “when standard patient-language symptoms of the same concept and the same spelling have a duplicate concept status, a concept with a current status is mapped”**

The fourth claimed condition is, “when standard patient-language symptoms of the same concept and the same spelling have a duplicate concept status, a concept with a

current status is mapped.” An example of this is that if the mapping may be to either “nausea (finding)” or “nausea NOS (finding)”, “nausea (finding)” may be associated as being used if it has the current status. (That is, the term “nausea” is currently selected as being used by the user because the user prefers use of this term over “nausea NOS (finding)” in this case.)

This distinguishing claim feature allows the user to have control over how to resolve ambiguity in mapping. Neither Ross, Pories, nor NPL discloses resolving an ambiguity between two similar terms by allowing the user to have control over how the mapping is resolved.

**E. The applied references do not teach or suggest “when a standard patient-language symptom is to be mapped to an overlapping or unclear concept, the mapping is performed only if no alternative concept for mapping is available”**

The fifth claimed condition is, “when a standard patient-language symptom is to be mapped to an overlapping or unclear concept, the mapping is performed only if no alternative concept for mapping is available.” For example, use of terms which are “NOS” or Not Otherwise Specified are inherently vague. A concept such as “Nausea NOS (finding)” would not be used for mapping if a less vague choice (such as “Nausea (finding)”) is available.

This distinguishing claim feature causes the mapping to prefer more definite terms, increasing the quality of the mapping. Neither Ross, Pories, nor NPL discloses preferring clear, definite concepts over overlapping or unclear concepts.

Thus, for any and/or all these reasons, the applied references cannot be used to establish a prima facie case of obviousness with respect to at these distinguishing claim features that characterize the mapping.

Accordingly, Applicant respectfully requests that the rejections of claims 13 and 28 be reconsidered and withdrawn, and that these claims be passed on to allowance. Also, at least based on their dependency to claim 13, claims 14-21 should be found allowable, as well as for their additional distinguishing features.

***Conclusion***

All of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider all presently outstanding rejections and that they be withdrawn. Applicants believe that a full and complete reply has been made to the outstanding Office Action and, as such, the present application is in condition for allowance. If the Examiner believes, for any reason, that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at the number provided.

Prompt and favorable consideration of this Amendment and Reply is respectfully requested.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

Jason D. Eisenberg  
Attorney for Applicants  
Registration No. 43,447

Date: June 21, 2011

1100 New York Avenue, N.W.  
Washington, D.C. 20005-3934  
(202) 371-2600